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| EXAMINER |
|---|
| CHEN, HUO LONG |

| ART UNIT | PAPER NUMBER |
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| 4157 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/643,993 | YAMAKAWA ET AL. | |
| | Examiner | Art Unit | |
| | Huo Long Chen | 4157 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☐ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-9,11 and 12* is/are rejected.

7)☐ Claim(s) *10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## *Specification*

1. **Claim 5 and 6** are objected because of the following information: (Taken from PG Pub No. 2004/0105079)

There is a mistyping in **claim 5 and 6**. "more that 50" has to be changed to "more than 50 percent". Appropriate correction is required.

## *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain enablement of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**Claim 9** recites the limitation "a length of the fixing member is equal to or longer than one third of a length of the condensing lens". Examiner will take the position that claim limitation defines a length of the fixing member is equal to or longer than one third of a length of the condensing lens for the purpose of prior art consideration.

**Claim 10** recites the limitation "The image formation apparatus according to claim 1, wherein a mechanical strength of the fixing member is higher than a mechanical strength of the condensing lens". It has not been disclosed in the invention. Therefore, the specification shall contain a written description about a mechanical strength of the fixing member is higher than a mechanical strength of the condensing lens to enable any person skilled in the art to use it.

## *Double Patenting*

3. 8.33 Basis for Nonstatutory Double Patenting, "Heading" Only

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. 8.34 Rejection, Obviousness Type Double Patenting - No Secondary Reference(s)

**Claim 1** rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claim 1** of U.S. Patent No. 6,985,312. Although the conflicting claims are not identical, they are not patentably distinct from each other because **claim 1** instant application is substantially similar in scope and contents as that **claim 1** of U.S. Patent No. 6,985,312. The difference being the adhesive layer is explicitly recited as 0.2 mm thick in U.S. Patent No. 6,985,312. However, this specific value is non-critical and would not have been precluded from using in the instant application.

## *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim (1 and 9) is rejected under 35 U.S.C. 102 (b) as being anticipated by Anzai (US 5,526,193).

With respect to **claim 1**, Anzai teaches a lens mounting structure, which is formed integrally with an optical housing and the lens is attached to the mounting structure (col. 4, lines 34-36, Fig. 2). A lens mounting structure for an optical housing comprises a base (Fig. 2, element 22), a lens bonding structure (Fig. 2, elements 28, 30 or 32) provided on the base, and a

scanning lens (Fig.1, element 20) mounted on the lens bonding structure through the adhesive layer (Fig. 2, elements 34A, 34B or 34C)

With respect to **claim 9**, examiner will construe that the description about the length of the fixing member is equal to or longer than one third of a length of the condensing lens as disclosed in the specification. According to Anzai's invention, the lens is fixed to a lens mounting structure such that the length of the lens mount is parallel to the length of the lens (Fig. 1 & 2). Comparing with the length of the lens (Fig.1 element 20) and the lens mounting structure (Fig.2 element 22), the length of the lens mount is longer than the length of the lens.

## *Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim (2-4, 11) is rejected under 35 U.S.C. 103(a) as being unpatentable over Anzai (US 5,526,193) in view of Tachibe et al. (US 6,449,107)

With respect to **claim 2**, Anzai discloses a lens mounting structure. See claim 1 above. However, Anzai fails to expressly disclose that a coefficient of thermal conductivity of the lens mounting structure is lower than a coefficient of thermal conductivity of the optical housing.

Tachibe et al. disclosures that in order to improve the heat dissipation, it is required to improve the heat conduction of the housing itself and it is necessary to select a material of high heat conductivity as material for housing (col.1, lines 50-54, col. 7, lines 23-26).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use Tachibe et al. knowledge of heat dissipation to improve Anzai's lens mounting structure, which has lower coefficient of thermal conductivity than an optical housing to avoid conducting heat from an optical housing to a lens. This improvement of the lens mounting structure of Anzai was within the ordinary ability of one ordinary kill in the art basing on the teachings of Tachibe et al.

Therefore, it would have been obvious to one ordinary skill in the art to combine the teachings of Anzai and Tachibe et al. to obtain the invention as specified in claim 2.

With respect to **claim 3**, Tachibe et al. discloses a method to contact a substrate and a casing by using a positioning member (Fig. 2, element 2, 13 and 12, col.7, 43-45).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use Tachibe et al. method to connect a casing and a substrate with a positioning member to improve Anzai's lens mounting structure, which has positioning members to engage a lens and a lens mounting structure together. This improvement of the lens mounting structure of Anzai was within the ordinary ability of one ordinary kill in the art based on the teachings of Tachibe et al.

Therefore, it would have been obvious to one ordinary skill in the art to combine the teachings of Anzai and Tachibe et al. to obtain the invention as specified in claim 3.

With respect to **claim 4**, see claim 3 above. In addition, at the time of invention, it would have been obvious to a person of ordinary skill in the art to use Tachibe et al. positioning member to improve Anzai's lens mounting structure, which has positioning members to engage a lens mounting structure and optical housing together. This improvement of lens mounting structure of Anzai was within the ordinary ability of one ordinary kill in the art based on the teachings of Tachibe et al.

With respect to **claim 11**, Tachibe et al. discloses a method to fix two casings by using screws and both casings have holes to be enable them to be fixed together with screws (Fig, 17-19, col. 10, lines 17-39)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use Tachibe et al. method to fix two casings with screws to improve Anzai's lens mounting structure to have a lens mounting structure and an optical housing which both of them have holes and engage together with screws. This improvement of lens mounting structure of Anzai was within the ordinary ability of one ordinary kill in the art based on the teachings of Tachibe et al.

Therefore, it would have been obvious to one ordinary skill in the art to combine the teachings of Anzai and Tachibe et al. to obtain the invention as specified in claim 11.

## *Claim Rejections - 35 USC § 103*

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (b) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim (5-8) is rejected under 35 U.S.C. 103(a) as being unpatentable over Anzai (US 5,526,193) in view of Itabashi (US 6,700,687) and Lam (US 2002/0006687)

With respect to **claim 5**, examiner will construe that "more that 50" means "more than 50 percent". Claim is merely about the material for a fixing member to have a good heat resistant property to avoid counting heat from optical housing to condensing lens. Examiner does not see the criticality of the ultraviolet transmittance being equal to or more than 50 percent would affect the usage and property of the fixing member to avoid transmitting heat from optical housing to condensing lens. Glass has the well-known heat resistant property, and Itabashi also teaches that glass-made components are superior in heat-resistant property (col.2, lines 18-20). However, Itabashi fails to disclose that UV (ultraviolet) cure adhesive can be appropriately used to fix parts.

Lam discloses using UV cure adhesive (Fig. 15, element 113) to attach a lens-and-frame assembly consisting of lens (Fig. 15, element 89) and frame (Fig. 15, element 91) to a lens shelf (Fig. 15, element 109, paragraph 0044).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the combination of Itabashi and Lam which fixes parts together with UV cure adhesive and has the glass as heat insulator to improve Anzai's lens mounting structure to have a lens mounting structure that is made of glasses and fixed it to optical housing with UV cure adhesive. This improvement of lens mounting structure of Anzai was within the ordinary ability of one ordinary kill in the art basing on the teachings of Tachibe et al and Rivman et al.

Therefore, it would have been obvious to one ordinary skill in the art to combine the teachings of Anzai, Itabashi and Lam. to obtain the invention as specified in claim 5.

With respect to **claim 6**, see claim 5 above. In addition, Itabashi teaches that it is not possible to use a plastic as a housing of an optical scanning device, and metal has come to be employed therefor. Itabashi also teaches that metal has heat conductivity larger than that of plastic. Therefore, it would be obvious for a person with ordinary kill in the art to use plastic as an option to form a fixing member to avoid heat transmitting from optical housing to condensing lens.

With respect to **claim 7**, as being mentioned in claim 5, Lam discloses using UV cure adhesive (Fig. 15, element 113) to attach a lens-and-frame assembly consisting of lens (Fig. 15, element 89) and frame (Fig. 15, element 91) to a lens shelf (Fig. 15, element 109, paragraph 0044). Since Lam is able to fix a lens-and-frame and a lens shelf together by using UV cure adhesive, it would be obvious for a person with ordinary kill in the art to use UV cure adhesive as an option to fix the condensing lens and fixing member together.

With respect to **claim 8**, see claim 7 above.

## *Claim Rejections - 35 USC § 103*

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (c) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claim (12) is rejected under 35 U.S.C. 103(a) as being unpatentable over Anzai (US 5,526,193) in view of Tachibe et al. (US 6,449,107) and Rivman et al. (US 3,965,952).

With respect to **claim 12**, Tachibe et al. discloses a method to fix two casings with a so-called snap fit mode and one of the casings has holes to be enable the usage of the snap fit mode (Fig, 15, col. 10, lines 1-4), but Tachibe et al. failed to disclose that a plastic snap fastener could be used in a so-called snap fit mode.

Rivman et al. teaches a plastic snap fastener for bags, raincoats, cartons and the like (Abstract, Fig. 2, 3, and 5).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the combination of Tachibe et al. and Rivman et al. which fixes two casings together with a so-called snap fit mode by using a plastic snap fastener to improve Anzai's lens mounting

structure, which fixes a lens mounting structure and a optical housing together with a so-called snap fit mode by using the plastic snap fastener and a optical housing has holes to engage the plastic snap fastener. This improvement of lens mounting of Anzai was within the ordinary ability of one ordinary kill in the art based on the teachings of Tachibe et al and Rivman et al.

Therefore, it would have been obvious to one ordinary skill in the art to combine the teachings of Anzai, Tachibe et al and Rivman et al. to obtain the invention as specified in claim 12.

## *Contact*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huo Long Chen whose telephone number is (571) 270-3759. The examiner can normally be reached on 8:00am to 5:00pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571)272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Huo Long Chen Patent Examiner

VU LE
SUPERVISORY PATENT EXAMINER